

Application No. 10/733,802
Atty. Docket No. 8473RECEIVED
CENTRAL FAX CENTER
OCT 16 2006In the Claims:

1. (Currently Amended) A gypsum panel comprising:
 - a gypsum core having a planar first face and a planar second face;
 - a fibrous facing material adhered at least to the first face by gypsum in the gypsum core at least partially penetrating into the fibrous facing material; and
 - a high energy radiation cured coating of a radiation curable formulation ~~cured in place on the fibrous facing material;~~ and
 - ~~an aggregate material on the high energy radiation cured coating. said high energy radiation-cured coating having a surface coating of an aggregate material adhered to the high energy radiation-cured coating, wherein the surface coating of the aggregate material adhered to the high energy radiation-cured coating has a surface morphology which enhances bonding of surface treatments to the panel.~~
2. (Original) The gypsum panel of claim 1, wherein the fibrous facing material is a multi-ply paper facing material.
3. (Original) The gypsum panel of claim 1, wherein the fibrous facing material is a non-woven mat of mineral fibers.
4. (Original) The gypsum panel of claim 3, wherein the fibrous facing material is a single-ply glass fiber mat facing material.
5. (Original) The gypsum panel of claim 1, wherein the fibrous facing material is a woven or non-woven mat of synthetic fibers.
6. (Original) The gypsum panel of claim 1, wherein the fibrous facing material is a blend of mineral fibers and synthetic fibers.

7. (Original) The gypsum panel of claim 3, 4, 5 or 6 wherein the fibrous facing material has a dried coating of an aqueous mixture of a filler and a binder.

8. (Previously Presented) The gypsum panel of claim 1, wherein the gypsum core includes a water-resistant additive in an amount sufficient to improve the water-resistant properties of the core.

9. (Previously Presented) The gypsum panel of claim 8, wherein the water-resistant additive comprises at least one of a wax emulsion, an organopolysiloxane and a siliconate.

10. (Previously Presented) The gypsum panel of claim 9, wherein the gypsum core is essentially void of starch.

11. (Canceled).

12. (Previously Presented) The gypsum panel of claim 1 wherein the aggregate material is selected from ceramic microspheres, glass microspheres, calcium carbonate, sand, aluminum oxide, crushed stone, glass fibers, gypsum and perlite.

13. (Previously Presented) The gypsum panel of claim 1, wherein:

the gypsum core includes at least one of a wax emulsion, an organopolysiloxane and a siliconate in an amount sufficient to improve the water-resistant properties of the core;

the gypsum core is essentially void of starch and

the fibrous facing material comprises glass fibers.

14. (Withdrawn) A method of making the gypsum panel of claim 1 comprising sandwiching a gypsum slurry between two moving sheets of facing material, one of said sheets comprising a fibrous facing material, curing and drying the gypsum slurry to form a set gypsum panel, applying a coating of a radiation curable formulation, which is essentially free of any unreactive components, onto the fibrous facing material of the set gypsum panel mat, applying a surface

coating of an aggregate material onto the coating of the radiation curable formulation and curing the coating of the radiation curable formulation with high energy radiation.

15. (Withdrawn) The method of claims 14 wherein the aggregate material is selected from ceramic microspheres, glass microspheres, calcium carbonate, sand, aluminum oxide, crushed stone, glass fibers, gypsum and perlite.

16. (New) A gypsum panel comprising:

a gypsum core having a planar first face and a planar second face;

a fibrous facing material adhered at least to the first face; and

a radiation cured coating of a radiation curable formulation on the fibrous facing material, wherein the radiation curable formulation comprises at least one polymer which has ethylenically unsaturated double bonds.

17. (New) The gypsum panel of claim 16, wherein an aggregate material is included in the radiation curable formulation.

18. (New) The gypsum panel of Claim 16, further comprising an aggregate material on the high energy radiation cured coating.

19. (New) The gypsum panel of Claim 1, wherein the radiation curable formulation comprises at least one polymer which has ethylenically unsaturated double bonds.